

On semirings whose simple semimodules are projective

Il'in S.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2017, Pleiades Publishing, Ltd. We study the semirings whose simple semimodules are all projective. In particular, we establish that for every semiring S this condition implies the injectivity of all simple S -semimodules and show that, in contrast to the case of rings, the projectivity of all simple semimodules in general is not a left-right symmetric property.

<http://dx.doi.org/10.1134/S0037446617020045>

Keywords

projective semimodule, simple semimodule, V^* -semiring, V -semiring

References

- [1] Il'in S. N., "V-Semirings," Sib. Math. J., vol. 53, no. 2, 222–231 (2012).
- [2] Abuhlail J. Y., Il'in S. N., Katsov Y., and Nam T. G., "On V-semirings and semirings all of whose cyclic semimodules are injective," Comm. Algebra., vol. 43, no. 11, 4632–4654 (2015).
- [3] Tuganbaev A. A., Ring Theory. Arithmetic Modules and Rings [Russian], MTsNMO, Moscow 2009.
- [4] Golan J. S., Semirings and Their Applications, Kluwer Acad. Publ., Dordrecht, Boston, and London 1999.
- [5] Il'in S. N., "Direct sums of injective semimodules and direct products of projective semimodules over semirings," Russian Math. (Iz. VUZ), vol. 54, no. 10, 27–37 (2010).
- [6] Kasch F., Modules and Rings [Russian translation], Mir, Moscow 1981.
- [7] Skorniyakov L. A., Elements of Lattice Theory [Russian], Nauka, Moscow 1970.